

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-17 (Canceled)

Claim 18 (**Currently Amended**): An implantable vascular filter, comprising:

an ~~expandable~~ implantable filter body having a substantially conical shape, the filter body configured to be expanded and secured to an inner wall of a blood vessel; and an implantable agitation member movably coupled to the filter body;

wherein the ~~vascular filter body is~~ and the agitation member are detachable from a delivery catheter for implantation in the blood vessel and wherein the agitation member is adapted to break apart particles captured within the filter body.

Claim 19 (Previously Presented): The vascular filter of claim 18, wherein the agitation member is located substantially within an interior volume of the filter body.

Claim 20 (**Currently Amended**): The vascular filter of claim 18, further comprising [[a]] an implantable flow-receiving member coupled to the agitation member, wherein the flow receiving member is shaped to be powered by the flow of blood through the blood vessel for causing the agitation member to rotate relative to the filter body.

Claim 21 (Previously Presented): The vascular filter of claim 20, wherein the agitation member is configured to reverse direction.

Claim 22 (Previously Presented): The vascular filter of claim 18, further comprising an elongate drive mechanism configured for removable attachment to the agitation member, wherein the agitation member is adapted to be powered by the elongate drive mechanism for causing the agitation member to rotate.

Claim 23 (Previously Presented): The vascular filter of claim 18, further comprising a clutch mechanism such that the agitation member moves relative to the filter body only when a particle is trapped within the filter body.

Claim 24 (**Currently Amended**): The vascular filter of claim 18, further comprising an implantable energy storage device directly coupled to the filter body for causing the agitation member to rotate.

Claim 25 (Previously Presented): The vascular filter of claim 24, further comprising an electronic sensor for detecting the presence of particles within the filter body.

Claim 26 (Previously Presented): The vascular filter of claim 18, wherein the agitation member is configured to vibrate for breaking apart the particle.

Claim 27 (Previously Presented): The vascular filter of claim 26, wherein the agitation member vibrates at ultrasonic frequencies.

Claim 28 (Previously Presented): The vascular filter of claim 27, further comprising a battery directly coupled to the filter body for supplying power to the agitation member.

Claims 29-30 (Canceled)

Claim 31 (**Currently Amended**): An implantable device configured to capture and macerate emboli within a blood vessel, comprising:

an expandable filter body having anchoring members for engaging an inner wall of a blood vessel;

an agitation member located substantially within an interior volume of the filter body, the agitation member permanently coupled to the filter body; and

a drive mechanism for rotating the agitation member with respect to the filter body;

wherein the filter body is and the agitation member are detachable from a delivery catheter for fixation in the blood vessel and wherein the agitation member is configured to macerate emboli captured within the filter body.

Claim 32 (Previously Presented): The implantable device of claim 31, wherein the drive mechanism comprises a flow receiving member configured to be rotated by blood flowing through the blood vessel.

Claim 33 (Previously Presented): The implantable device of claim 31, wherein the drive mechanism comprises an elongate drive catheter coupled to the agitation member.

Claim 34 (Previously Presented): The implantable device of claim 33, further comprising an aspiration catheter configured for advancement along the elongate drive catheter.

Claim 35 (**Currently Amended**): The implantable device of claim 31, wherein the drive mechanism comprises an implantable energy storage device coupled to the agitation member.

Claim 36 (**Currently Amended**): A ~~device~~ thrombus removal system configured to improve blood flow through a blood vessel, comprising:

a filter body ~~disposed along the~~ permanently fixed to a distal end portion of an outer catheter, the outer catheter having a length for extending from a location outside the body to a treatment site in a blood vessel, the filter body configured to capture and hold embolic particles, the filter body having a flexible membrane supported by a plurality of stiff members and wherein the stiff members are biased to hold the filter body open in an unconstrained condition;

~~an~~ a rotatable agitation member ~~disposed along the~~ permanently fixed to a distal end portion of an inner catheter, the inner catheter being centrally disposed within the outer catheter such that the filter body provides a centering mechanism for the agitation member and wherein the agitation member being is rotatably and slidably coupled to the filter body; and

an aspiration catheter sized for slidable advancement over the outer catheter, the aspiration catheter configured for applying a negative pressure in the annular region between an outer wall of the outer catheter and an inner wall of the aspiration catheter for drawing particles from the blood vessel into the filter body;

wherein the rotatable agitation member is longitudinally advanceable ~~relative to a location distal to~~ the filter body for breaking apart a thrombus located distal to the filter body and wherein the filter body is configured to collapse into the aspiration catheter for ~~removing the~~ withdrawing captured particles from the blood vessel while captured particles are contained within the filter body.

Claim 37 (Canceled)